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National Organics Standards Board
Room 4008 – South Building 1400 and Independence Ave. SW
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Subject: Proposed Actions on Hydrated Lime

I urge you to retain hydrated lime as an approved substance for organic applications.

Historically, hydrated lime has probably been the most important natural organic chemical agent for agricultural use. Interestingly, lime is derived from sea shells, which have been abandoned from their original organic source; and slowly, over the eons, compressed into layers of limestone. The limestone, previously organic, (now, perhaps, incorrectly considered in-organic), is ground into agricultural limestone or heated and converted into lime.

Our forefathers made their own lime by placing chunks of limestone onto a layered wooden pile. Once the wood was set on fire, the wood burned, producing sufficient heat to drive the Carbon Dioxide out of the limestone, producing "Burnt Lime".

Limestone + Heat = Burnt lime (Calcium Oxide + Magnesium Oxide)+ Carbon Dioxide.

After the fire went out, the farmers then poured water over the "burnt lime", and wood ashes. The water reacted with the burnt lime to make a fine powder, hydrated lime.

Burnt lime + water = hydrated lime powder. ($CaO.MgO + H_2O = Ca(OH)_2 + Mg(OH)_2$.

The mixture of hydrated lime and wood ashes was spread at a rate of about 2 bushels per acre, both satisfying the soils need for pH adjustment and also added necessary organic minerals, – Calcium and Magnesium, from the limestone, and Potassium from the wood ash.

The immediate high pH of the hydrated lime is sufficient to control undesirable soil bacteria, fungi, and virus; yet it is not mutagenic, nor toxic to higher life forms. **This reduces the need for the use of pesticides and fungicides.**

However, very quickly, the lime absorbs Carbon Dioxide from the soil water and air to re-carbonate it back to a very fine particle size limestone, at a pH suitable for crop growth. This process has been used for many thousands of years, sustaining the needed crop growth to feed the world.

Hydrated lime + Carbon Dioxide = limestone….both recovering the Carbon Dioxide released earlier, and lowering the pH to agricultural use levels.- truly a beneficial natural organic process.

To eliminate Hydrated lime from organic farming is to eliminate true organic farming.

The use of hydrated lime in farming also is very beneficial to soil maintenance. The high pH of the lime agglomerates the clay particles into sand/silt size particles as it reacts with the clays. This creates a better tilth and breathable soil, which is very beneficial and desirable for crop production. The resulting larger particle size also reduces soil erosion, both from excess water and from high winds. Excess lime treatment can also drive off the Sodium salts in the soil, making the soil suitable for crop production.

I urge you to keep hydrated lime as a very valuable organic agricultural material.

Sincerely,

Harry L. Francis
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